

REMARKS

As requested by the MPEP 2001.06 and mentioned in the non-provisional application, Applicants point out to the Examiner that they have several co-pending applications in same general art filed on September 20, 2001:

Serial No. 09/960,641 entitled INTEGRATED NETWORK MANAGEMENT SYSTEM;

Serial No. 09/960,270 entitled IMPROVED FILE NAMING SYSTEM WITH TRACKING AND DIAGNOSTIC FEATURES IN A CONTENT DELIVERY SYSTEM;

Serial No. 09/960,650 entitled ARCHITECTURE FOR DELIVERING VIDEO AND OTHER DATA AT HIGH BANDWIDTHS;

Serial No. 09/960,637 entitled MOBILE NODE FOR SATELLITE BASED CONTENT DELIVERY SYSTEM;

Serial No. 09/960,843 entitled EDGE NODE ARRANGEMENT IN A SATELLITE BASED CONTENT DELIVERY SYSTEM FOR INTERNET USERS;

Serial No. 09/960,249 entitled SCALABLE IP ADDRESSING SCHEME FOR MULTIPLE NOCs AND EDGE NODES;

Serial No. 09/960,602 entitled SELF-CONTAINED DEMONSTRATION NODE IN A SATELLITE BASED CONTENT DELIVERY SYSTEM;

Serial No. 09/960,622 entitled GLOBAL OR MULT-REGION CONTENT DELIVERY SYSTEM;

Serial No. 09/960,603 entitled END TO END SIMULATION OF A CONTENT DELIVERY SYSTEM;

Serial No. 09/960,605 entitled LARGE EDGE NODE FOR
SIMULTANEOUS VIDEO ON DEMAND AND LIVE STREAMING OF SATELLITE
DELIVERED CONTENT;

Serial No. 09/960,263 entitled MOBILE NETWORK OPERATIONS
CENTER FOR SATELLITE BASED CONTENT DELIVERY SYSTEM;

Serial No. 09/960,246 entitled SCALABLE EDGE NODE;

Serial No. 09/960,645 entitled NETWORK OPERATION CENTER
ARCHITECTURE IN A HIGH BANDWIDTH SATELLITE BASED DATA
DELIVERY SYSTEM FOR INTERNET USERS;

Serial No. 09/960,636 entitled FORWARD CACHE MANAGEMENT
BETWEEN EDGE NODES IN A SATELLITE BASED CONTENT DELIVERY
SYSTEM; and

Serial No. 09/960,649 entitled MICRONODE IN A SATELLITE BASED
CONTENT DELIVERY SYSTEM.

OATH/DECLARATION

A duplicate of the declaration of Mark Kalmbach that had already been
sent to the Patent Office on December 21, 2001 is included with this response. Aaron D.
Falk was erroneously listed as an inventor. Please delete his name from the list of named
inventors.

Section 112 Rejections

Claims 1 and 4 have now been amended to resolve any issues with respect to Section 112. The acronym NOC has been defined in both independent claims as Network Operations Center. Furthermore, the acronym VLAN has been defined in claim 1 as Virtual Local Area Network.

Applicants now believe that the Section 112 rejections have now been overcome.

Section 102 Rejections

The Examiner has rejected Claims 1 and 4 under Section 102 as being anticipated by Olds et al. Specifically, the Examiner stated that “Olds et al. (U.S. Patent No. 6,691,274) teaches an edge node that receives content from a NOC via a satellite link and distributes it to a last mile service provider.” Applicants respectfully disagree – Olds does not teach an edge node. Although Olds uses the word “node” to describe his satellite gateways 18, 20, those devices function very differently from Applicant’s “edge node.” According to Olds, “The satellite gateways 18, 20 are nodes at the edge of the satellite communication system 10 that each provide a connection between system 10 and one or more external communication networks (e.g. networks 26 and 28) or other external communication entities” (column 2, lines 54-57). This definition, which includes two-way applications such as telephony, stands in contrast to Applicants’ receive-only edge node that has specific functionality.

This difference is more dramatically shown by Olds' description of his gateways: "The satellite gateways 18, 20 each include at least one satellite transmitter and at least one satellite receiver for use in supporting a wireless communication link (e.g., a satellite uplink/downlink) with a satellite in the constellation" (column 2, lines 61-65). Applicants' edge node has no such satellite transmitter, and is not intended to have a transmitter.

Moreover, Olds contains no discussion of any other components for the satellite gateways. Therefore, Olds' gateway 20 clearly does not anticipate the Applicants' server, shared storage, receiving router, router, etc. of the Applicants' edge node as shown in Figure 5 and described on page 27 of Applicants' specification, nor does it anticipate the media server, private VLAN, and public VLAN of Applicants' claim 1. None of these elements is shown in Olds.

According to MPEP § 2131, "To anticipate a claim, the reference must teach every element of the claim." Olds' satellite gateway does not teach the media server, private VLAN, and public VLAN of Applicants' claim 1, nor does it contain the shared storage, receiving router, etc. of Applicants' Figure 5 and specification page 27.

The combination of elements in Olds does not anticipate Applicants' edge node either. In his remarks on claim 1, the Examiner suggests each individual element of claim 1 is anticipated by various elements of Olds. Applicants' respectfully disagree with the Examiner's statements. The Examiner's comments on each of Applicants' element will be addressed below.

In paragraph 7.a., the Examiner states that "there is a media server in network 26 capable of sending data to the video-on-demand server." Applicants

respectfully disagree. Although Olds discloses a video on demand service -- it does not disclose a video-on-demand server.

There is no mention of a media server anywhere in the Olds specification as part of network 26 or any other element. Furthermore, "sending data to the video-on-demand server" of Olds (i.e, the source), as the Examiner suggests, would make no sense because that would be toward the source of the video content delivery described by Olds. In contrast, Applicants' invention requires the media server to transmit data to the end user -- not back toward the source.

In paragraph 7.b., the Examiner observes that the second element of claim 1, namely "A private VLAN that receives content from the satellite link and distributes it to the media server", can be "any type of LAN" and refers to element 22 in Olds, an internetworking function. Again, Olds does not mention the specific structure of element 22, nor does he indicate that a LAN is a way to provide the function of element 22. It simply is not there. Furthermore, the Examiner's statement that "this can be any type of LAN" is mistaken. Olds does not mention of any private networking capability. Yet privacy is very important for Applicants' edge node. The isolation from a conventional network maintains the security of the private VLAN while it receives content from the satellite link. Applicants chose a private VLAN over a simple wired connection or other LAN for two reasons: (1) to improve security; and (2) the ability to implement changes to the system without stopping operations. Olds does not disclose or suggest these improvements.

In paragraph 7.c., Examiner suggest that Applicants' public VLAN is comparable to external network 26 and refers to Olds figure 1, element 26 and Olds

column3, lines 37-41 which reads, "Alternatively, or in addition, the internetworking functions 22, 24 can be located outside of the satellite system 10 as part of an external network (e.g. network 26) or other communication entity (e.g., service provider 32) or as a standalone node between the gateway and the external network." As before, Olds' does not mention a VLAN.

Olds elements 26 and 28 are routine public network connections. However, these connections are very different from Applicants' VLAN. A public VLAN is more than simple connectivity via an external network. According to the Webopedia website, a VLAN is "a network of computers that behave as if connected by the same wire even though they may be physically located on separate segments of a LAN, configured through software, not hardware." Applicants' VLAN is a single networked entity that is configured as one, not disparate units (like Olds) and used for the public, or external, portion of the edge node. Therefore, this element can't be "any type of LAN", nor is it anticipated by the generalized external network of Olds.

The last element of claim 1 links the media server to both the public VLAN and private VLAN and incorporates them in a single computer. Examiner refers to element 26 of figure 1 of Olds and cites lines 32-45 of Olds as follows;

"In a satellite communications system, as illustrated in FIG. 1, the internetworking functions 22, 24 are typically co-located with or part of the corresponding satellite gateways 18, 20 which may contain a large number of different functions for use with various external entity types. Alternatively, or in addition, the internetworking functions 22, 24 can be located outside of the satellite system 10 as part of an external network (e.g., network 26) or other communication entity (e.g., service provider 32) or as a standalone node between the gateway and the external network. The inter[net]working functions 22, 24 normally include both hardware and software elements and, in an asynchronous transfer mode (ATM) environment, are characterized as part of the ATM adaptation level."

The Examiner then comments “Note that the server in network 26 has access to all these functions.” First, Applicants point out that network 26 of Olds is on the transmitting end of the system, not the receiving end, like Applicants’ edge node. Olds’ network 26 does not receive content from the satellite, it transmits content to the satellite from service provider 32. Secondly, even if the network 28 which receives content for subscriber 30 of Olds incorporates the internetworking functions 24 and is co-located with gateway 20, it would still be different than Applicants’ edge node. Applicants’ edge node has a specific configuration of a media server that connects the private and public VLANs. This configuration provides a secure environment for receiving streaming media and for distribution to last mile service providers that Olds does not disclose and which his system is incapable of providing.

It is important to understand that Applicants have combined the benefits of a public VLAN and private VLAN and joined them in a system that takes advantage of the unique attributes of both types of systems. Olds does not disclose either a public VLAN or a private VLAN and certainly does not disclose combining the two as Applicants have done.

By contrast, the combination of network 28, internetworking function 24, and gateway 20 of Olds is explicitly a combination of an “external network” (column 3, line 39), “functionality that is used to provide for interoperability between the satellite system 10 and the communication entities outside the system, “ (column 3, lines 25-28), and “nodes at the edge of the satellite communications system 10 that each provide a connection between the system 10 and one or more external communications networks” (column 2, lines 54-57). As mentioned earlier, the general nature of this combination is

designed to provide “any number of other communications connections” (column 2, lines 30-31), beside the video-on-demand to subscriber connection which can include “voice, video, computer data, etc.” (Olds column 1, line 32) versus Applicants’ edge node which can’t because it is optimized for receiving streaming broadcast content.

Furthermore, Olds places no limits on how gateway 20 or internetworking function 24 are accessed. The privacy of the satellite receiving side of the edge node is essential to maintaining the security of the transmitted information flowing through the system of present invention. No similar concerns are addressed by Olds, nor is there any equipment disclosed that would provide this indispensable function.

Olds also does not mention the steps or apparatus necessary to accommodate streaming media, both live and non-live, as do Applicants. Accommodating streaming media in a flexible, yet secure environment for operators and content providers is the primary motivation for the implementation that is described by Applicants’ claims.

Applicants again refer the Examiner to MPEP § 2131. Not only are the elements of Applicants’ edge node not present in Olds, the combination as described in claim 1 was not anticipated by Olds.

In a broader sense, the Examiner has also misconstrued Olds’ communication network to be similar to Applicants’. The Olds’ network is a two-way system useable for a number of applications as indicated by the following: “Any number of other communication connections can also be provided through the satellite communication system 10.” (column 2, lines 30-32). Further details of a two-way application are provided in column 3, lines 5-8,: “For example, in a typical system, a

public switched telephone system (PSTN) will be coupled to a satellite gateway so that users of the PSTN can place calls through the satellite system 10 when required.”

Applicants’ system is part of a one-way broadcast network for transmitting streaming multimedia content as indicated on pages 8 and 9 of the specification:

“The method and system of the present invention regard an internet broadcast network in which multimedia content is delivered from content providers to internet users without degradation. The internet broadcast network allows the content providers to bypass most internet congestion points by utilizing a hybrid of satellites and powerful land-based edge nodes of the internet broadcast network... After reception, multimedia content is streamed from the edge node to the internet users’ computers through the last mile service provider.”

Applicants have amended independent claims 1 and 4 to reflect the nature of this usage as part of a broadcast network.

Another difference between the two networks is that there is no terrestrial link between the gateways in Olds while Applicants’ has a terrestrial back channel. In particular, Olds’ specification states, “As shown in FIG. 1, a subscriber 30 coupled to network 28 can communicate with a video-on-demand service provider 32 coupled to network 26 though the satellite communications system 10” (column 2, lines 26-30). Satellite communications system 10 is the only connection between subscriber 30 and video-on-demand service provider 32. Olds has no terrestrial back channel for the satellite link as shown as element 600 in Applicants’ Figure 1 and as incorporated in newly added claims 5 and 6. Therefore, the elements connecting to the satellite link are fundamentally different: Olds’ is limited to a two-way system with both gateways transmitting and receiving over a satellite link. Applicants’ system is a one-way system

with one transmitting NOC and one receiving edge node that could not be easily modified to have a return channel over a satellite link.

The Examiner has also erred in stating that two other components of the internet broadcast network, namely the NOC and last mile service provider, are taught by Olds. Applicants' NOC is shown in FIG. 1 as being comprised of Router 302, Content Storage 306, Servers 310, Broadcast Manager 304, IP Gateway 308, and Uplink 312. The most comparable elements in Olds are the satellite gateways. But there is nothing in Olds to suggest that gateway 18, which is used to send data from the video-on-demand service provider, comprises the router, content storage, servers, broadcast manager and other components of Applicants' NOC.

The other item, the last mile service provider, is very different than the service provider in Olds. Applicants' last mile service provider "provides [an] internet connection to the internet user" (page 7), "through the use of digital subscriber line, ISDN, cable modem, and satellite modem technology" (page 6). . Olds use of a service provider is strictly as a content provider, specifically the video-on-demand service provider element 32 or as an "information service provider" in Olds' claim 5. Olds does not describe anything like Applicants' last mile service provider which supplies internet access to a subscriber or subscribers on its own private network.

The Examiner rejected claim 4 with a similar line of reasoning starting with noting "that there is a media server in network 26 capable of sending data to the video on demand server". The same logic applies to this comment as for claim 1 with respect to Examiner's erroneous citation of a NOC, and a last mile service provider, as well as the differences between Applicants' broadcast network and the generic satellite

link of Olds. Similarly, as with the first element of claim 1, there is nothing in Olds that is comparable to Applicants' "processor that executes code for serving both live and non-live content."

As to the second claim element, Examiner cites elements 18 and 22 of Olds. Applicants respectfully disagree with this comparison. Elements 18 and 22 of Olds are on the transmitting side of the embodiment described in Olds' specification as described in column 4, lines 47 through 51: "For example, packets processed and encoded within internetworking function 22 (and other internetworking functions associated with gateway 18) are transferred to gateway 18 after processing within the internetworking functions has completed, "and later in lines 58 – 59, "The headers for all of the packets to be uplinked by gateway 18 to the satellite 12..." This stands in direct contrast to Applicants' satellite interface "that receives content from the satellite link."

Against the third element of claim 4, Examiner cites column 3, lines 4-15 which was referenced against the private VLAN of claim 1. This passage lists a variety of external networks that can connect to the satellite gateway. By contrast, Applicants' third element is "a wire network interface", not an external network.

The fourth element of claim 4 delineates the coexistence of the first three elements of claim 4 in a single personal computer. Examiner again cites the passage referring to the co-location of networks. As with the fourth element of claim 1, Applicants point out that this combination is insufficiently described to be comparable with the specific combination of processor, satellite interface, and wire network described in detail in the specification and enumerated in claim 4 as existing on a single personal computer. Finally, as with claim 1, the features of Olds cited by the Examiner do not

meet the prior art requirements in MPEP § 2131. Olds does not detail the same detailed structure as Applicants' edge node of claim 4.

Section 103 Rejections

Examiner has rejected claims 2 and 3 as "being unpatentable over Olds et al. (U.S. Patent No. 6,691,274) in view of Wiederman et al. (USPN 6,654,347)."

With respect to claim 2, Examiner refers to Wiederman as disclosing "a system for A system for [sic] communication between VLANs wherein a VPN connecting the public VLAN to the private VLAN." Wiederman's disclosure pertains to connections not within a single computer, but between multiple sites, as indicated by the first lines of the Summary (column 2, lines 32-34) "One embodiment, accordingly, is a system for dynamically implementing across a plurality of virtual local area networks ("VLANs") across multiple sites." This is clearly different than a VPN being used to connect VLANs within a single computer.

Applicants disagree with the Examiner's obviousness conclusion with respect to both claims 2 and 3, and believe that conclusion is inconsistent with the prevailing law as enunciated in the MPEP.

As explained in MPEP § 2141.02, Applicants' invention must be considered as a whole:

"In determining whether the invention as a whole would have been obvious under 35 U.S.C. 103, we must first delineate the invention as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question ... but also to those properties of the subject matter which are inherent in the subject matter *and* are disclosed in the specification. . . Just as we look to a chemical and its properties when we examine the obviousness

of a composition of matter claim, it is this invention *as a whole*, and not some part of it, which must be obvious under 35 U.S.C. 103.” (Citations omitted; emphasis in original).

Moreover, “[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” MPEP §2141.02 (emphasis in original). Therefore it is imperative that: “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP 2141.02 (emphasis in original).

Given that claim 1 is substantially different than the system of Olds for the reasons given above, it would not have been obvious to a person of ordinary skill in the art to combine Applicants’ novel invention of claim 1 with the additional elements recited in either dependent claim.

Other Prior Art

Examiner cites Davidson (6,735,184) as prior art pertinent to Applicants’ disclosure. As stated in the Summary of the Invention (columns 2-3, lines 65-67 and 1-4):

“The present invention is directed to a system and method for a terrestrial IP network for efficient transmissions within a satellite-terrestrial network. The terrestrial network of a satellite-terrestrial telecommunications system provides for IP signaling between satellite access nodes without the use of dedicated, circuit-switched trunks therebetween.”

Davidson’s invention pertains to a terrestrial IP network as part of a satellite-terrestrial network, not an edge node as part of a satellite system for bypassing a terrestrial network. Moreover, Davidson’s network is used for circuit-switched mobile

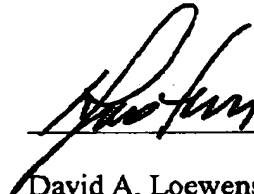
calling systems, i.e. mobile telephony. These systems are inherently two-way systems, and, therefore, are different than the broadcast network environment of Applicants' invention. Applicants' invention could not work in Davidson's network because it is a receive-only edge node. Applicant's invention has no means for connecting to a Public Land Mobile Network or a Public Switched Telephone Network (see Davidson Figure 4), and no way to handle two-way phone calls.

Therefore, Applicants respectfully submit that Davidson's invention is not pertinent to the present invention.

Conclusion

For the foregoing reasons, Applicants submit that the Examiner's rejection of the claimed inventions was incorrect and the claims should be allowed.

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